

# Mohave County Miner.

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## Tunnel Boring Machines.

It has long since been an accepted fact that the most economical method of mining is (the topography being adaptable) by the tunnel method. By means of tunnels mining regions are opened at great depth and the ore bearing fissures are drained of their waters by gravity and the ore and waste is removed by the same method. The result is that there is no need of any hoisting apparatus, which can be run only at a great expense and there is no pumping to be done, thus saving the mine of another very expensive item. The disadvantage of tunnel mining, as conducted today, is the big cost of construction and the great length of time required to accomplish the work. Development tunnels are constructed with the idea of opening the ore bodies at great depth. The distance they must be driven to cut the veins at such depths is anywhere from two to ten times laterally to what is gained in depth. Anything that will expedite the work will necessarily reduce the cost, and when it becomes possible to do away with the present methods of tunnel driving and install tunnel boring machines, which will make a big hole in the mountain and advance at a rapid rate, the saving will be enormous.

Rock can now be drilled at the rate of 100 ft. per day by the present machine drills run by compressed air. The hole driven has, however, a diameter of but 3 in. It can be seen that were it possible to have the entire face of the tunnel covered by these drills the bore could be driven at about the same rate; provided, however, that the rock broken could be removed as rapidly as it fell. It would be impossible to operate a very large number of individual drills at one time in the face, as the mechanical apparatus for operating them is far too bulky.

The tunnel machines being devised have the general idea in view of massing a large number of drills on one enormous machine and giving the whole a sweeping or circular movement, the mass drills pulverizing every inch of the face of the tunnel. These machines plan upon operating about 40 or 50 individual drills in the one device, and will require about 500 h. p. to supply the compressed air. It is estimated that a force of five or six men can operate such a machine, or, in other words, six men would accomplish with the aid of the machine what would require more than a hundred men working on individual drills in the face of a tunnel, to say nothing of the large gang of men to remove the rock broken. Of course, one-tenth of this number could not work simultaneously in the face of a tunnel of ordinary dimensions.

As at present worked the machine drill men first have to set up the machines, run the drills for several hours and drill numerous holes, then shoot and await the removal of the gases until work can be started on clearing the debris. If the ventilation of the mine is artificial, an expensive plant of machinery is required, and at best the ventilation is imperfect. In distinction from the above, a machine which would break rock and mechanically convey it away at the same time, and have to stop only to replace dull drills by sharp ones, would be especially advantageous. The gas problem would be done away with and the constant flow of compressed air used in the operation would materially aid in the ventilation. As to costs, there could be no question as to the tremendous saving over the other method.

One tunnel machine has already been practically tested, and in some short runs has shown an actual speed of 75 ft. to 125 ft. every 24 hours. Thus the practicability of the tunnel boring machine has already been tested, and it is now highly probable that it will be in general use not only in the mountains of the mining regions but in the big cities, such as New York, where vast transportation tunnel enterprises are being constructed.—Denver Mining Science.

## Is Mining a Failure?

"Is mining a failure?" "Is more

money lost in mining than there is made?" These are questions which have been debated in city and town, in mining camp and in mountain ranges for a score of years or more, and they have been variously decided according to the good fortune or hard luck of mining men, prospectors and investors. Some are firm in the belief that mining is the greatest, the safest, and the most profitable industry of them all. Others are loud in their condemnation of mining in all of its branches. Both sides of the question offer the basis for seemingly sound arguments, but the decision of the umpire, judge or referee should not be taken as final until the actual test is applied, and this test embraces figures and statistics which are undeniably correct. Many there are who have lost money in mining. These can be enumerated by the thousands, and yet this does not establish the truth of the assertion that "mining is a failure." Hundreds of thousands may be lost in mining, but the sum total, as a matter of fact, falls far short of the enormous sums represented in dividend payments and clean profits; and, when the balance sheet is struck, if the actual profits in mining exceed the losses, it can be stated, without fear of successful contradiction, that mining is a success, and more, that as a legitimate pursuit, it takes even rank with any industry in which capital may seek investment.

For instance, for the first five months of the present year, eighty mining companies and metallurgical concerns have paid dividends aggregating \$25,609,657, and this on an outstanding capitalization of \$55,976,768, which would represent a return of 103 per cent on the investment.

It is an indisputable fact that every mining venture cannot expect or even hope to succeed, but the money lost in these failures is an insignificant sum when compared to the vast amounts paid out yearly by companies whose efforts have been crowned with success.

The greatest drawback to the mining industry is the lack of care, sound business sense, and good judgment disclosed by those who "take a flyer at it;" for with most people any investment in mining is regarded as a "flyer." Without investigation, without careful and painstaking examination of values and possibilities, the average investor puts up his good money; and he stands to lose. And yet these people would give any proposition in any other line of business the keenest scrutiny before making an investment. And, losing out, for lose they must, in ninety-nine cases out of one hundred, they are ever afterwards to be found in the ranks of those who are persistent in the claim that "mining is a failure," and illegitimate.

Still, the fact remains, that mining is the greatest industry of them all. That the returns on the investment are larger, more sure and safe than if invested in railroad stocks and bonds, and industrial securities.—Salt Lake Review.

## Notice to Sheepmen.

The News has received a copy of the order for dipping all sheep in Yavapai, Coconino, Apache and Navajo counties. The order is sent out from the office of Secretary J. C. Norton of the Sheep Sanitary Commission of Arizona by order of the Commission. The area mentioned is declared as infected district and that all infected bands of sheep or goats in said district must be dipped twice according to the rules of the Commission, and all other bands of sheep or goats in the district must be dipped once, under supervision of the Commission, at recognized dipping plants. Owners of sheep and goats should promptly arrange with inspectors or through the office of Secretary Norton of the Commission satisfactory dates and places for dipping. All sheep should be dipped before leaving their summer ranges to prevent infection being spread on the trails. The sheepmen are said to be in hearty sympathy with the commission and will gladly comply with the order. The result is expected to be a great saving to all owners of sheep and goats.—Williams News.

## The Holidays at Mexican Mines.

The Mexican peon is a difficult subject to hold steadily to his work. His observation of the national and church holidays is notorious, and these are so numerous that it is difficult for a large concern, particularly a smelter, which must keep running, to figure how they may pass certain holidays. Even this, however, is not as difficult a matter as it formerly was, the foreign influence apparently having reduced enthusiasm for the less important days. The question of holidays has been overcome by many companies, especially at the smelters, by a premium system or a bonus to the men who work more than a certain number of days of each month. This method has now been adopted by the Cananea Consolidated Copper company with excellent results; each man who works a minimum of 26 days during the month receives, as a premium in addition to his regular wage, 50 cv. for each day that he has been at work. This keeps the force together, an important factor where 3,000 men are employed, as is the case with the Cananea company. The four days that the men may be absent without losing the premium are so scattered through the month and among different men, not all taking the same days, that there is no disturbance or inconvenience.—Mining and Scientific Press.

## St. Anthony Reef Sold.

The St. Anthony Reef gold mine, in Sturgeon Lake, Thunder Bay district, Canada, has been sold to the New York firm of Drapier for \$350,000, it is reported.

The St. Anthony Reef, of 11 locations, is possibly the most advanced mine in the district, having a well-equipped plant of 10 stamps, with plates, two 150-horse power boilers, not to mention electric lighting plant, etc.

The vein in this property is said to be 32 feet wide, and the formation is porphyry with a small intrusion of granite. Considerable mining operations have been carried on here, but, owing to the fact that up to date the mine has been almost inaccessible except in winter, the public has not heard much of the Sturgeon Lake country in general, or any of the operating mines.

A mine is known by what it produces. The great Black Warrior property, which is believed to have been recently purchased by the Miami Copper company, has shown an increase in production during the past week that is nothing short of remarkable. The steps by which this Warrior mine is rising to prominence are given here-with for comparison. One month ago the Warrior mine was shipping fifty tons of ore daily to the smelter. One week ago the daily production was 80 tons of high grade ore. Wednesday the smelter received 155 tons of ore from the Warrior mine. This ore contained, by the smelter reports, from 18 to 22 per cent of copper. About 150 tons of ore averaging in mineral the same as Wednesday's shipment are being produced and shipped every day by the Warrior copper mine.—Silver Belt.

## Life in London.

Three hundred thousand Londoners live in one room tenements with three or more occupants. The death rate of the London districts in which a million people are housed not so well as horses is four times higher than normal. But London is not the only plague spot of England. In seven other cities the number of preventable and unnecessary deaths reaches a yearly total of 20,000, a black list of those slain by vile living conditions and overcrowding that equals the losses of the British in South Africa from wounds and disease. In Scotland 23 per cent of the families live in one room, and in Glasgow one third of the population have no more than one room for each family to huddle in. Conditions are no better in the smaller cities of Scotland. Kilmarnock has only 28,000 population, yet 35 per cent of its families dwell in single room tenements. One-eighth of the total population of Scotland do not know the decency of a

two-room house. Eight million people of the United Kingdom have an average family income of no more than \$5 a week, and in the cities they must pay at least a fourth of this for rent of pigsties misallotted tenements.—Providence Journal.

## Hubbard Lease a Bonanza.

A Tonopah dispatch says: The Hubbard lease at Luckyboy, Esmeralda County's lead-silver camp, up to June 1 shows an output of 345,950 lbs. Out of this amount they paid nearly 140,000 lbs. in dividends to the stockholders. This is a remarkable record, for the property was not in the shipping class until the last days of March.

During the present month an average of 40 tons of the precious ore has been shipped daily. Up until last Saturday 30 cars were shipped to the smelter. Manager Kendall states that after the lease expires another dividend will be forthcoming that will amount to a cleanup.

Mine operations at Luckyboy are booming. Ten hoists are in operation and several others are on the ground awaiting erection. High-power hoists are in operation on the following properties: Hubbard, Mitchell-Fairfield, Collins, Spencer, Oddie, McCormack, Brodigan, O'Keefe, Earle-Green and the McAfee. The steel galleys frame and the hoist for the Luckyboy Silver Leasing Co., better known as the Durand, will be in place shortly.

Work on the Hubbard lease is being pushed as rapidly as possible, as a marked increase is shown and the lease soon expires. About 150 men are employed on the workings, and 30 are kept constantly sacking the ore for shipment. At the expiration of the lease J. H. Miller will take charge of the property and work it systematically.

Fourteen leases are working in the district, employing about 500 men.

Workmen are busy installing the 125 ton smelter plant of the Arizona

United Mines Company. This company is pushing the work to completion as fast as men and money can do it. Teams are busy every day hauling in material. The smelter site has been chosen on the east side of the Republic shaft near the gulch. Excavation in the hill has been made and the site leveled off is 150 feet square independent of ore bins. The building will occupy a space 30x80 feet, and on the north side will be a retaining wall fifteen feet high, three feet wide at the base and two feet wide on top. One fifty horse power boiler, 18 feet long and weighing 12,000 pounds has arrived and the foundation is about ready for the placing of it. A 50-foot stack will be used.—Cochise Co. Press.

Two of the heaviest stockholders in the Stevens Copper Company arrived in Clifton last night for the purpose of making an examination of the mines, preparatory to the commencement of extensive work. It is understood that a sum of money has already been advanced and work is to be commenced at once. Charley Stevens, who is looking after the company interests at the mine, stated early this week that he had already made arrangements for the miners. This property is among some of the best mining claims in the upper Metcalfe district and as a good supply of ore has already been encountered in several places it is generally predicted that if new life and capital is forthcoming this will be a heavy producer.—Copper Era.

## What is Best for Indigestion?

Mr. A. Robinson of Drumquinn, Ontario, has been troubled for years with indigestion, and recommends Chamberlain's Stomach and Liver Tablets as "the best medicine I ever used." If troubled with indigestion or constipation give them a trial. They are certain to prove beneficial. They are easy to take and pleasant in effect. Price, 25 cents. Samples free at H. H. Watkins' drug store.

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G. R. Gooding, Santa Fe Agent

